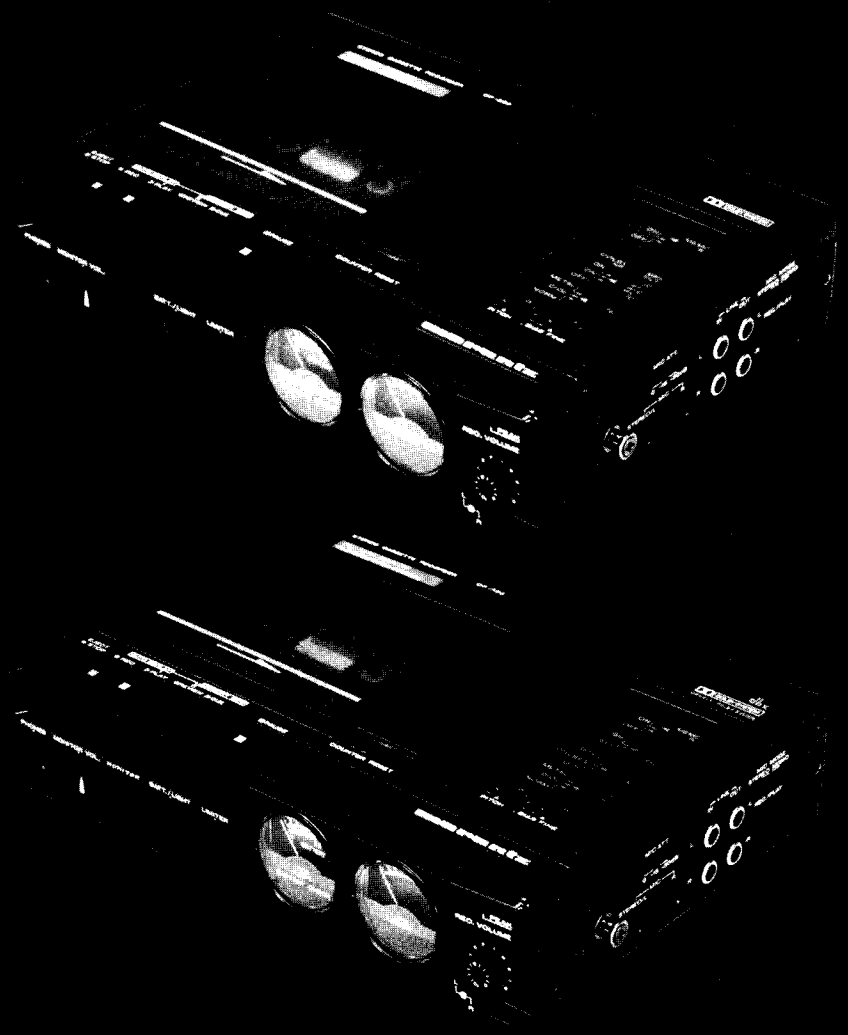
marantz®



Model CP230/CP430
STEREO
CASSETTE RECORDER

Handbook of Instruction

English ..... page 5
Français ..... page 12
Deutsch ..... seite 20
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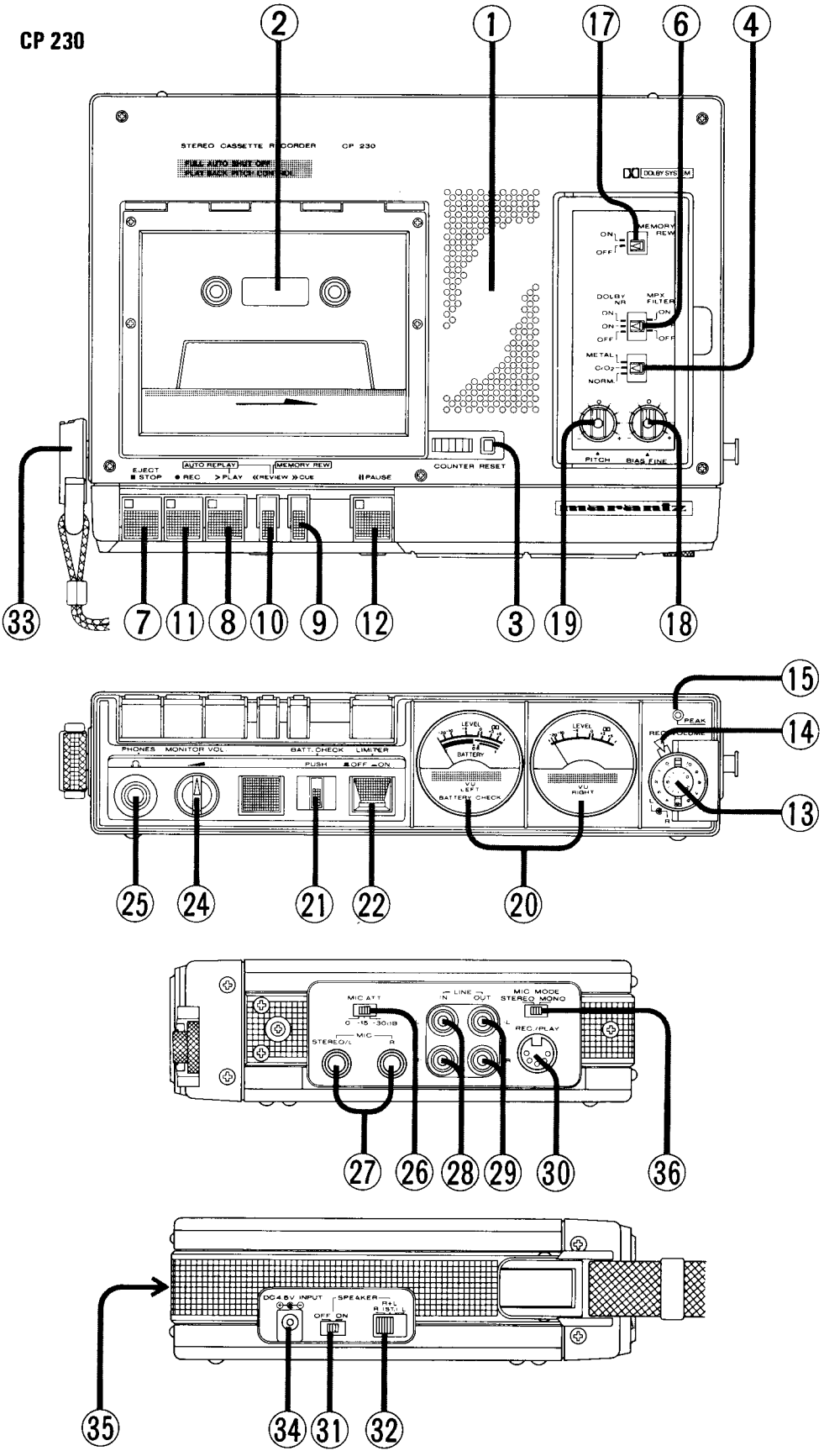
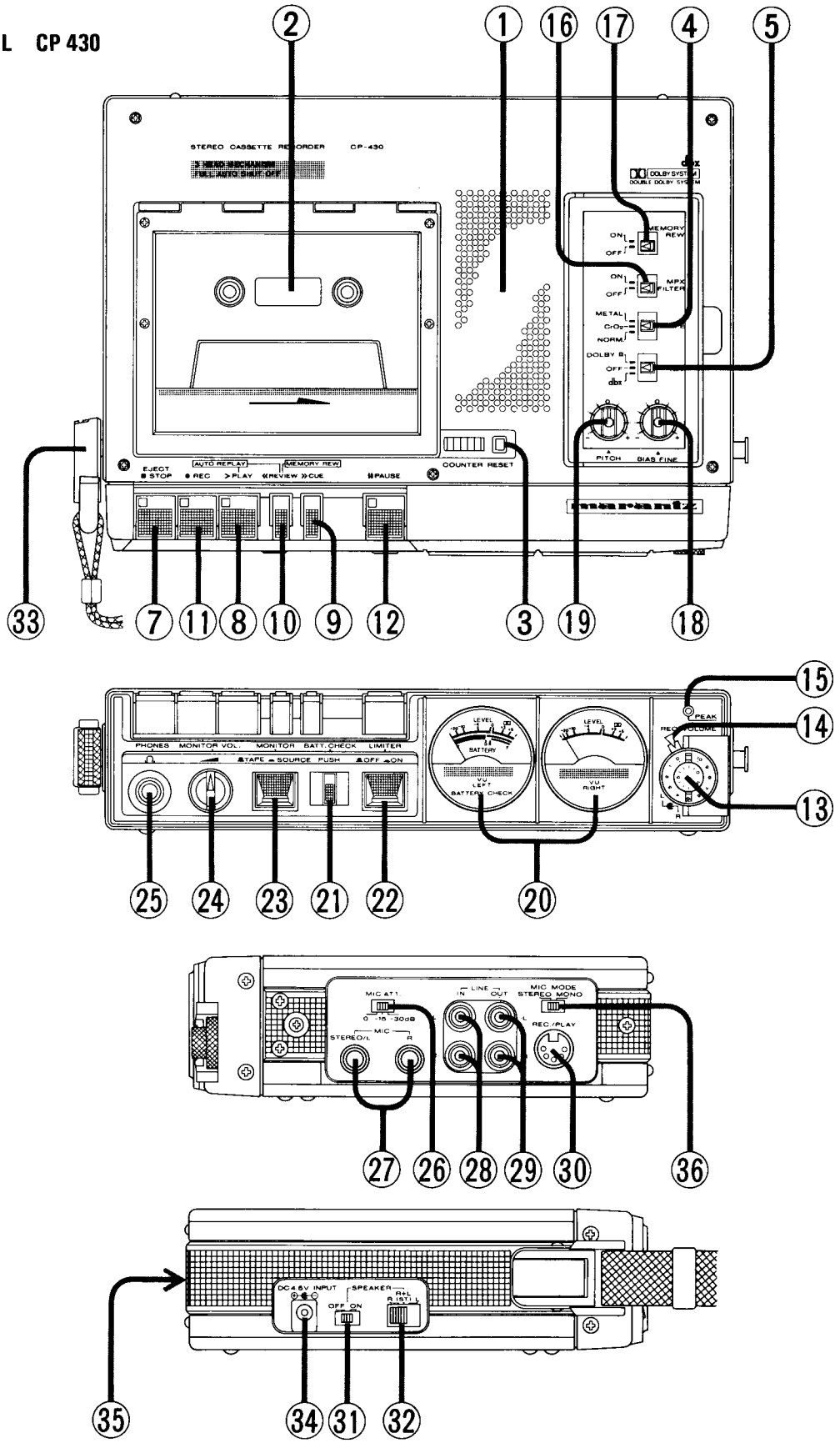
مدرس العربي ..... صفحة ١

ENGLISH : This unit meets the requirements of EEC Recommendation 82/499.
FRENCH : Cet appareil est conforme à la recommandation CEE 82/499.
SPANISH : Este aparato esta conforme a los requerimientos de la norma 82/499 de la CEE.
GERMAN : Dieses Gerät entspricht den Anforderungen der EWG Richtlinien 82/499.
DUTCH : Dit apparaat voldoet aan de in EEG publikatie 82/499 gestelde eisen.
ITALIAN : Questo apparecchio è conforme alla direttiva CEE 82/499.
SWEDISH : Enheten möter kraven av EG rekommendation 82/499.

MODEL CP 230


STEREO CASSETTE RECORDER CP 230
DOLBY SYSTEM
MEMORY REW
DOLBY NR
MPX FILTER
METAL
CrO2
NORM
PITCH
BIAS FINE
EJECT
STOP
REC
PLAY
REVIEW
CUE
PAUSE
AUTO REPLAY
MEMORY REW
COUNTER RESET
marantz
33
7
11
8
10
9
12
3
19
18
PHONES
MONITOR VOL
BATT. CHECK
LIMITER
PUSH
OFF ON
LEVEL
BATTERY
BATTERY CHECK
VU
LEFT
RIGHT
PEAK
REC LEVEL
VOLUME
15
14
13
25
24
21
22
20
MIC ATT
0 15 30dB
STEREO/L
MIC
R
LINE IN
OUT
MIC MODE
STEREO MONO
REC./PLAY
27
26
28
29
30
36
DC 6V INPUT
SPEAKER
OFF ON
35
34
31
32

MODEL CP 430


STEREO CASSETTE RECORDER CP-430
MEMORY REW
MPX FILTER
METAL
CrO2
NORM
DOLBY B
OFF
dbx
PITCH
BIAS FINE
COUNTER RESET
EJECT
STOP
REC
PLAY
REVIEW
CUE
PAUSE
AUTO REPLAY
MEMORY REW
marantz
PHONES
MONITOR VOL.
MONITOR
BATT. CHECK
LIMITER
TAPE
SOURCE
PUSH
OFF
ON
LEVEL
BATTERY
VU
LEFT
RIGHT
BATTERY CHECK
PEAK
REC VOLUME
MIC ATT.
0
-15
-30dB
MIC
STEREO/L
R
LINE
IN
OUT
MIC MODE
STEREO
MONO
REC/PLAY
DC 4.5V INPUT
SPEAKER
OFF
ON
R+L
R
L
1
2
3
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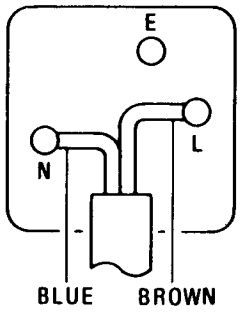
36

ABOUT THIS MANUAL

Refer to the figures given on pages 3 and 4.
The callout numbers correspond to those found in this manual. All references to the connections and controls are printed in **boldface type** as they appear on the unit.

FOR UNITS SOLD IN THE UNITED KINGDOM



IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

Blue	Neutral
Brown	Live

As the colours of the wires may not correspond with the terminal identification in your plug, proceed as follows:

- Connect the brown wire to the terminal marked "L" or coloured brown or red
- Connect the blue wire to the terminal marked "N" or coloured blue or black

For 13A plugs, conforming to BS 1363, use a 3A fuse.

For other plugs, use a 5A or lower fuse in the plug or adaptor or at the distribution board.

NOTE FOR U.K.

Recording and playback of any material may require consent.

For information, please refer to the –
Copyright Act 1956
Dramatic & Musical Performers Act 1958
Performers Protection Acts 1963 & 1972
and to any subsequent statutory enactments and orders.

PANEL FEATURES

(1) SPEAKER

(2) CASSETTE COMPARTMENT

(3) TAPE COUNTER

Used for easy reference and indexing. To return the numbers to "000" depress the RESET button.

(4) TAPE SELECTOR

Selects the proper bias and equalization to suit the most common types of cassette tapes.
NORM – for normal ferric oxide tapes.
CrO_2 – for chromium dioxide and other tapes requiring 70 μS equalization and high bias.
METAL – for metal tapes

(5) NOISE REDUCTION SWITCH

This switch is used to select the noise reduction system (Dolby NR, dbx, or NR OFF).

(6) DOLBY NR SWITCH

Activates the built-in Dolby Noise Reduction circuitry during recording and playback.

(7) STOP/EJECT BUTTON

The **STOP/EJECT** Button serves a dual purpose. To stop the tape in any mode, depress the button lightly. To open the cassette compartment lid, release the button and depress again firmly.

(8) PLAY BUTTON

When depressed, the **PLAY** Button engages the playback circuitry for flawless reproduction of previously recorded tapes.

(9) FAST FORWARD/CUE BUTTON (FF/CUE)

Depress this button for rapid advancement to any desired point on the tape. If depressed during playback, the tape will advance until the button is released, at which point tape play resumes automatically.

(10) REWIND/REVIEW BUTTON (REW/REVIEW)

Depress this button to rapidly rewind a tape. If depressed during playback, the tape will rewind until the button is released, at which point tape play resumes automatically.

(11) RECORD BUTTON (REC)

Pressing this button together with the **PLAY** button puts the unit in the Record mode.

(12) PAUSE BUTTON

To stop a tape in Play or Record modes.

(13) RECORD LEVEL CONTROLS

To increase the recording levels, turn the knob to the right.

(14) REC INDICATOR

This indicator lights red when the **REC** button is pressed to put the unit in the Record mode.

(15) PEAK LEVEL INDICATOR

During recording, the red LED indicates high level sounds which are too rapid to be measured by the VU Meter.

(16) MPX FILTER

When recording FM stereo broadcasts, the MPX filter removes spurious signals which interfere with the Dolby NR system.

(17) MEMORY REWIND

When the tape is rewound with the **MEMORY REW** switch set to **ON**, tape travel stops when the counter reaches "999".

(18) BIAS FINE ADJUSTMENT

The **BIAS FINE** control enables fine adjustment of the bias to achieve the maximum performance obtainable from the tape used. In most instances the center detented position provides satisfactory biasing for each tape formulation (Normal, CrO_2 and metal). Tape tolerances may require a slightly different bias.
To adjust the **BIAS FINE** control for optimum performance proceed as follows:
Connect the CP430 line in and line out to your amplifier as indicated in No. (28) and (29). When recording from a program source with exceptional high end response, listen to the results during recording and compare the sound quality between source and tape. Adjust the **BIAS FINE** control for the best results.

(19) PITCH CONTROL

When the **PITCH CONTROL** knob is at the "0" position, it is set at normal speed. Turn it in the H direction to increase the tape speed. Turn it in the L direction to decrease the tape speed.

(20) VU METERS

The VU Meters indicate the average Record/Playback level.

(21) BATT/LIGHT BUTTON

Pressing this button while the recorder is operating lights the two VU Meters. The meter lamps go out approximate 10 seconds after the button is released. The meter on the left indicates the battery condition when this button is depressed

(22) LIMITER

When this switch is set to **ON**, strong signals will be automatically limited assuring low distortion recording. Be sure to set this switch to **OFF** when adjusting the recording level. The **LIMITER** has no function during playback.

(23) MONITOR SWITCH

When recording, this switch may be placed in the **SOURCE** position to monitor the signal before it is recorded, or the **TAPE** position to monitor the signal actually recorded on the tape.

(24) VOLUME CONTROL

The **VOLUME** Control regulates the sound volume heard through the speaker(s).

(25) PHONES JACK

Accepts headphones (optional) utilizing a standard stereo phone plug.

(26) MICROPHONE ATTENUATOR SWITCH

For extremely loud volume microphone recordings, depressing this switch prevents input overload and better record level adjustment.

(27) MICROPHONE JACKS

Will accept any low impedance microphone (optional) utilizing a standard 6 mm phone plug. When using stereo microphones which use one plug for both the left and right channels (optional), insert that plug into the L (STEREO) jack.

NOTE:
When microphones are selected for recording do not monitor through speakers as this will cause howling (acoustic feedback) which could damage your audio equipment. Use headphones for monitoring.

(28) LINE INPUT

Should be connected to the Tape output jacks of your amplifier.

(29) LINE OUTPUT

Should be connected to the Tape Monitor inputs of your amplifier.

(30) DIN JACK

The connection of a DIN cable between this jack and the DIN jack of an external component, duplicates both **LINE OUTPUT** and **LINE INPUT** functions.

(31) SPEAKER ON/OFF SWITCH (SPKR MON)

Place this switch in the **ON** position to monitor recordings through the built-in speaker.

(32) SPEAKER MODE SWITCH (SPKR MODE)

Select Left, Right or Left + Right channels for speaker monitoring.

(33) SHOULDER STRAP

(34) EXTERNAL DC POWER INPUT JACK (DC 4.5 V)

This jack is provided to operate your stereo cassette recorder from an external 4.5 volt DC power source.

(35) BATTERY COMPARTMENT

Accepts three "D" size batteries or the MARANTZ Rechargeable Battery Pack (RB430).

(36) MIC MODE SWITCH

This switch should be used for monaural recording when a microphone is used. When this switch is in the **MONO** position, it is possible to record with the microphone connected to the **L+R/L** jack.
For the **STEREO** position of this switch, please refer to the paragraph explaining the use of microphones.
When the switch is in the **MONO** position, the **R** mic is disabled.

POWER SOURCES

Your Stereo Cassette Recorder may be operated using any of for power sources:

BATTERY OPERATION (BATTERIES NOT INCLUDED)

- Open the Battery Compartment cover by depressing the finger grip and pulling OUT. (See Figure1.)
- Install three "D" size batteries.

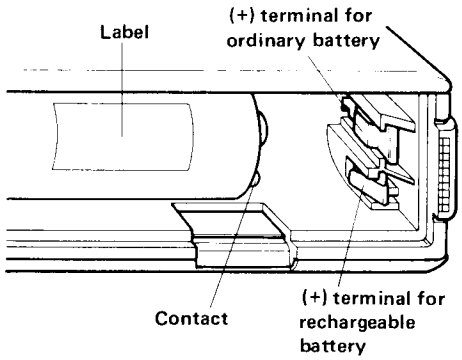
IMPORTANT:

Each battery should be installed observing the correct polarity as shown in Figure.

- Close the Battery Compartment cover.

NOTE:

When checking battery condition, a left meter reading below the "BATT" area indicates a weak battery condition. When this occurs, replace all three batteries.



RECHARGEABLE BATTERY PACK

The RB 430 can be recharged again and again, thereby eliminating the need for frequent battery replacement.

RECHARGEABLE BATTERY PACK INSTALLATION

Open the battery compartment cover, then install the battery pack by pressing the flat - side of the pack against the spring and positioning the + side of the pack against the charging terminal of the recorder. Ensure that the label side of the battery pack is facing up.

CHARGING THE BATTERY PACK

The battery pack can be charged by connecting the AC adapter.
Charge the rechargeable battery RB 430 for 16 – 24 hours with the CP230 or CP430 stopped. If the battery is charged with the unit operated, it cannot be charged fully.
The RB-430 is shipped uncharged, to prevent deterioration during storage. Be sure to charge the battery before use.

AC POWER

The AC adapter accessory makes it possible to operate the recorder on AC power. Before plugging the adapter into an AC outlet, check the outlet voltage and set the AC adapter for that voltage. Afterwards, insert the AC adapter's output plug into the 4.5V DC jack in the recorder.

NOTE:

The RB430 Battery Pack is automatically recharged, or ordinary batteries disconnected, when the power cord is connected to the AC receptacle.

CAUTION:

When not using the recorder, unplug the AC adapter from the wall outlet and the DC jack on the recorder.

CAUTION FOR RECHARGEABLE BATTERY

When you charge the battery while using the CP230 or the CP430, charging shall be completed after approximately 16 hours of use. Charging for a longer period will cause overcharging, which would shorten the life of the rechargeable battery.
The battery can be destroyed if shorted, so be careful to avoid shortage.

OPERATION DURING CHARGING

It is advisable not to use the unit during charging, as it could be responsible for trouble with the AC adaptor.

CAUTION UPON USING THE AC ADAPTOR

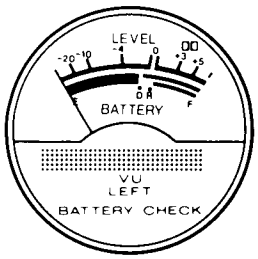
When the AC adaptor is detached from the AC outlet while still plugged into the CP230 or CP430, the unit cannot operate even if power is supplied from another source (batteries for example).

AC ADAPTOR

The AC adaptor accessory can only be used with the CP230 or the CP430.
Do not use this AC adaptor for other units or purposes as this could cause problems.

BATTERY CHECK

When the BATT LIGHT button is pressed, the meter on the left shows the amount of battery wear. The "D" mark on the scale indicates the minimum level on which the unit can be used with dry cells. Change the batteries when the charge falls below this level. The "R" mark indicates the minimum level for the rechargeable battery pack; recharge the battery pack when the meter reads below this level.



OPERATING INSTRUCTIONS

PRELIMINARY CONTROL SETTINGS

Rec Level (L/R)	Minimum (to left)
Volume	Minimum (to left)
Monitor (CP430 only) Source	
Tape Select	Set EQ and BIAS to match the type of tape you are using
NOISE REDUCTION	OFF
LIMITER	OFF
SPKR MON	ON
SPKR MODE	L + R
MIC ATT	0 dB

RECORDING CONNECTIONS

You may record through the Microphone or Line Input jacks.

For microphone recording, connect an optional low impedance One-Point Stereo Microphone or two optional individual microphones to the **MIC L** and **R** jacks of your cassette recorder. Please note that only microphones which employ a 6 mm phone plug may be used.

The Line Input jacks are used to record line level signals from an external source such as a receiver or another tape recorder. Connect one end of an audio cable (with a phono plug termination) to the **L LINE IN** jack of your cassette recorder, and the other end of the cable (terminated with an appropriate plug) to the Left channel output jack of the external source. Connect your cassette recorder's **R LINE IN** jack to the Right channel of the external source in the same manner.

NOTE:
When using a one-plug type stereo microphone, insert the plug in the L (STEREO) jack.

TO RECORD

1. Insert a blank cassette.
2. Push the **REC** button and the **PLAY** button together.

Your Stereo Cassette Recorder is now in the Record mode.

TYPE AND BRAND OF TAPES TO USE

In cassette recording the type and brand of cassette you use has a great influence on the quality of your recordings. Therefore, it is advantageous to purchase the highest quality cassettes available. Chromium dioxide (CrO_2) and metal tapes generally provide better fidelity than normal ferric oxide tapes. When using these kinds of tapes set the **TAPE SELECTOR** switch on the unit in the correct position to suit the characteristics of the tape.

We recommend the use of cassettes with a recording capacity of 90 minutes or less. In production the performance of our cassette decks is tested using the following tapes:

Type of Tape	Ref. Tape	Market Name
Normal	TDK AC 212 (C-60)	TDK D
CrO_2	TDK AC 512 (C-60)	TDK SA
Metal	TDK AC 711 (C-60)	TDK MA TDK MA R

MONITORING DURING RECORD

SOURCE MONITORING (for CP430 only)

With the **MONITOR** Switch in the **SOURCE** position and the **SPKR MON** switched **ON**, you will be able to monitor the source being recorded by simply turning up the **VOLUME** Control.

SOURCE MONITORING (CP230 only)

With the **SPKR MON** switched **ON**, you will be able to monitor the source being recorded by simple turning up the Volume Control. Monitoring may be accomplished through the use of the internal speaker, or a stereo headphone.

The **SPKR MODE** preliminary control setting given is for monitoring through the internal speaker.

When monitoring the recording with headphones, place the **SPKR MODE** switch in the center (**L&R**) position.

TAPE MONITORING (CP430 only)

In addition to source monitoring, the CP430 contains a third head which enables you to monitor directly from the tape as a recording is made. To use this feature, place the **MONITOR** Switch in the **TAPE** position and turn up the **VOLUME** Control.

Source and Tape Monitoring may be accomplished through the use of the internal speaker, external speakers, line output connections or a stereo headphone.

The **SPKR MODE** preliminary control setting given is for monitoring through the internal speaker.

NOTE:
Refer to Page 9 for instructions on how to monitor Dolby NR recordings.

CAUTION:
To avoid audio feedback when making a microphone recording, place the microphones a suitable distance away from the speaker. If desired, the internal speaker may be defeated by placing the SPKR MON Switch to the OFF position.

ADVANCED RECORDING TECHNIQUES

CONTROLLING THE RECORD LEVEL

The best method of controlling the record level is determined by the content of the particular program source. Use the guidelines below to obtain the desired recording results.

LIMITER

ON: Allows you to manually set the record level of both channels using the Rec Level Controls while an internal limiter circuit automatically prevents overload distortion resulting from sudden level peaks.

OFF: Permits full manual control of the record level of both channels using the Rec Level Controls. This position assures optimum dynamic range recordings.

SETTING THE RECORD LEVEL

PROCEDURES FOR RECORDING WITH THE LIMITER

Turn the limiter on after setting the recording level. To set the level, set the limiter switch to **OFF**, then adjust the **REC VOLUME** control while watching the VU meters.
Ordinarily, VU meter needle deflection should be as large as possible, while the peak level meter should only light occasionally. If the indicator lights continuously, the level is too high; this will result in distorted sound. Conversely, if the VU meter needle stays on the left side of the scale and the indicator does not light at all, the level is too low and a poor S/N ratio will result.

HIGH VOLUME MICROPHONE RECORDINGS

Certain microphone recording situations may result in extremely high microphone input levels. In such cases the Rec Level Control cannot be set to the desired position without VU meter deflection far into the red zone. A greater range of Record Level Control rotation can be obtained by depressing the **MIC ATT** Switch. When depressed, this switch will attenuate the input level by 15 dB or 30 dB. In normal recording, leave the **MIC ATT** Switch in the "**out**" position.

NOISE REDUCTION SYSTEMS

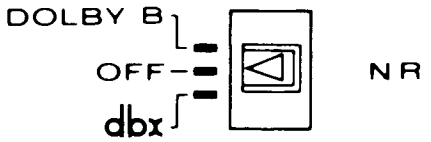
dbx Noise Reduction System (CP430 only)

The dbx NR system gives a large noise reduction effect resulting in wide dynamic recording. The dbx NR system has the following features:

1. The noise reduction effect is about 30 dB in the absence of a signal.
2. The dbx works linearly on the whole audio band to obtain wide band noise reduction effect.
3. The sound should not distort even at high recording levels.
4. The maximum recording level at high frequency is increased.
5. Low distortion recording is possible, resulting in real hi-fi sound.
6. Level matching is not necessary, resulting in small tracking error between recording and playback.

Recording/playback with dbx NR system

The CP430 NR switches are located as shown in the figure.



"dbx" . . . . . When the NR switch is set to dbx, recording and playback using the dbx NR system are possible.

"dbx encoded disk" . . To record a dbx encoded disk, set the NR switch to OFF. To playback the recorded tape, set the Noise Reduction switch to dbx.

DOLBY B NR SYSTEM

The Dolby B Noise Reduction system increases the level of low volume mid and high frequency signals during recording and reduces the level of these signals by an identical amount during playback. As a result the playback signal is identical to the original source signal but the level of background noise generated by the tape and tape recorder is reduced.

Recording/playback with Dolby B NR System

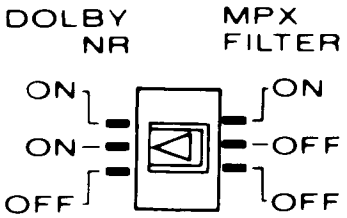
For recording and playback with the Dolby noise reduction system set the **NOISE REDUCTION** switch to **"DOLBY B NR.**

MPX FILTER (CP430 only)

When recording FM stereo with the Dolby NR system, set the MPX FILTER switch to ON. When recording from other sources or without Dolby NR, set the **MPX FILTER** switch to **OFF**.

DOLBY B TYPE NR (CP230 only)

The CP230 NR switches are located as shown in the figure below.



Set the **NOISE REDUCTION** switch to **ON** when using Dolby noise reduction. This enables both Dolby NR recording playback. When recording stereo broadcasts with Dolby NR, set **DOLBY NR** and **MPX FILTER** to **ON**. Otherwise, set **DOLBY NR** to **ON** and **MPX FILTER** to **OFF**.

"NR OFF" . . . . . .To turn the NR circuit OFF, set the NR switch OFF. On this setting, recording/playback without NR system is possible.

As NR systems are not interchangeable, play back the tape with the NR system used to record it.

MONITORING YOUR RECORDING (CP430 only)

The Double Dolby NR system used in the CP430 enables you to encode and record a signal using the Dolby NR process and at the same time to decode and monitor that signal from the tape. The decoded signal may be monitored when the **MONITOR** Switch is placed in the **TAPE** position.

NOTE:
When playing back a tape recorded with Dolby NR, always place the NOISE REDUCTION Switch to the Dolby NR position.

IMPORTANT:
In the Record mode, previously recorded information on the tape will automatically be erased.

TO PROTECT VALUABLE RECORDINGS

To protect valuable recordings from accidental erasure, the record capability of either side of a cassette can be defeated. Use a small screwdriver to breakout one or both safety tabs. (Figure 2 shows how to remove the side "A" safety tab.)
The record capability of either side of a cassette can be restored by covering the appropriate opening where the tab was removed with cellophane tape. (Figure 3 shows cellophane tape applied to side "A" safety tab opening.)

TO PLAYBACK

1. Insert a pre-recorded cassette, or playback a tape just recorded—rewind the tape to the beginning.
2. Be sure the EQ setting of the Tape Select Switch matches the type of tape you are using.
   - METAL 70 μS
   - SPECIAL CrO_2 70 μS
   - NORMAL 120 μS
3. Place the **MONITOR** Switch in the **TAPE** position (CP430 only).
4. Set the **NR** Switch to **OFF** when playing back a tape recorded without NR system. Set the **NR** switch to **Dolby NR ON** (CP230) or to **Dolby B NR** (CP430) when playing back a tape recorded with Dolby B NR.
   Set the **NR** Switch to **dbx** (CP430) when playing back a tape recorded with dbx NR system.
5. Depress the **PLAY** Button.
6. Adjust the Volume Controls for a comfortable listening level.

NOTE:
For playback through optional headphones, or Line Output connections, refer to the SPECIAL FEATURES SECTION.

REWIND

Check that the **MEMORY REW** switch is in the **OFF** position. To rewind a tape, depress the **REW/REVIEW** Button. The tape will rewind to the beginning. To stop at other desired points, depress the **STOP/EJECT** Button.

REVIEW

Check that the **MEMORY REWIND** switch is in **OFF** position. Partially depressing the **REW/REVIEW** Button during Playback operation permits you to monitor information on the tape as it rewinds. When fully depressed, information is muted. When the desired portion of the tape is reached, release the button to automatically resume tape play.

FAST FORWARD

To rapidly advance the tape in a forward direction, depress the **FF/CUE** Button. when the desired point is reached, depress the **STOP/EJECT** Button.

CUE

Check that the **MEMORY REW** switch is in the **OFF** position. Partially depressing the **FF/CUE** Button during Playback operation permits you to monitor information on the tape as it is rapidly advanced. When fully depressed, information is muted. When the desired portion of the tape is reached, release the button to automatically resume tape play.

PAUSE

Depress the **PAUSE** Button to momentarily stop the tape in the Record or Playback mode. Depress the button a second time to resume tape motion.
The Pause feature provides for the convenient editing of material while recording or the playback of individual short segments of tape while remaining in the selected mode of operation.

CAUTION:
The FAST FORWARD and REWIND buttons will not lock down if no battery or AC power is supplied. This is not an indication of trouble with the unit.
With the MEMORY REWIND switch set to ON, the REW and FF button canot be locked when the tape counter reads 900~999.

PITCH CONTROL

The **PITCH** control operates only during playback. Note that variation in the frequency response increases during playback for tapes recorded using noise reduction. Normal speed is indicated when the **PITCH** control is set to the center (click) position.

CAUTION:

- When recording using a microphone, howling may result with the **SPEAKER** switch set to ON. At that time, use headphones or set the **SPEAKER** switch to OFF.

- At the beginning or end of the recording, pop noise sometimes recorded on the tape. To prevent this, proceed as follows.
  1. Press the **PAUSE** button.
  2. Press the **RECORD** and **PLAY** button.
  3. Press the **PAUSE** button again to start recording.
  4. Press the **PAUSE** button to stop the tape.
  5. Press the **STOP** button to stop recording.

- When recording with batteries, using the speaker or headphones to monitor may exhaust the batteries.
  Set the monitor control to zero except when necessary.

- When the batteries are exhausted, the tape moves, but recording is sometimes not possible. Replace the batteries referring to the battery indicator.

- When the unit is used at a low temperature, the power consumption of the unit increases and the battery voltage decreases. In a low temperature condition, the battery life may be shortened.

SPECIAL FEATURES

USE OF A HEADPHONE

For private listening, connect a low impedance headphone (optional incorporating a 6 mm stereo phone plug to the **PHONES** jack. When monitoring a stereo recording, set the **SPKR MODE** switch to the (L+R) position.

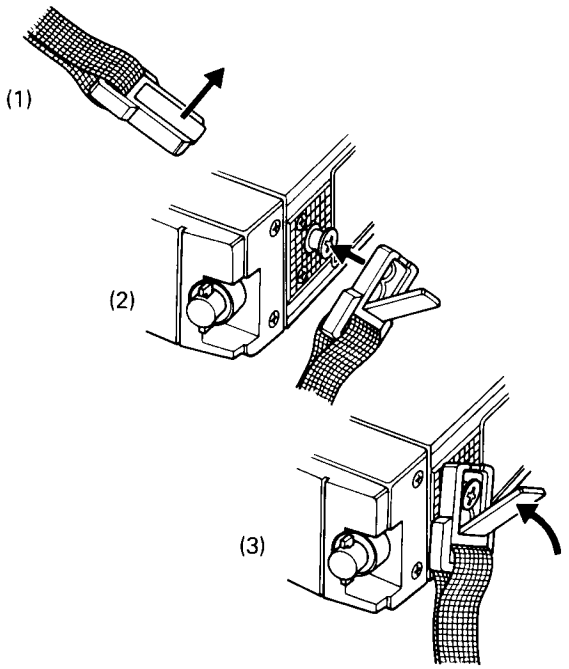
LINE OUTPUT CONNECTIONS

An external component may be connected to these jacks to monitor or record from your cassette recorder.

SHOULDER STRAP

The adjustable shoulder strap provides a convenient method for carrying your cassette recorder during mobile operation.

ATTACHING THE Shoulder Strap



TOTAL SHUT OFF

This built-in feature automatically disengages the transport and shuts off the unit when the end of the tape is reached in any mode of operation.

AUTO REPLAY

When the **REW** button is pressed and locked while the unit is in the PLAY mode with the **MEMORY REW** switch set to **ON**, the tape is rewound until the counter reaches "999" tape travel then automatically starts in the PLAY mode. Playback can be started at any point desired by zeroing the counter at that point in advance.

MEMORY REW

When the **REW** button is pressed with the **MEMORY REW** switch set to **ON**, tape travel stops when the counter reaches "999". Playback can be started at any point desired by zeroing the counter at that point in advance.

TO ERASE A TAPE

1. Insert the cassette with the side you wish to erase facing UP.
2. Set the **REC VOLUME** to minimum (fully counterclockwise).
3. Simultaneously press the REC and PLAY buttons.

USE OF THE DIN JACK

The **REC/PLAY** jack is a **DIN**-type jack which permits your unit, through the use of a European 5-wire cable, to record from or playback through similarly equipped external components.

PROPER CARE AND MAINTENANCE

- Periodically clean the tape heads, guides and pinch roller with a soft cloth or cotton swab moistened with denatured alcohol or a commercial head cleaning solution.
  Clean the heads after removing the batteries and disconnecting the AC adapter. Head cleaning procedures are as described below.
  1) Depress the **STOP/EJECT** Button to open the Cassette compartment.
  2) Depress the **PLAY** Button to engage the head assembly. After cleaning has been completed, depress the **STOP/EJECT** Button to disengage the head assembly.
- Tape heads and guides also become magnetized over a period of time, and should be demagnetized periodically using a commercially available head demagnetizer.
- When cleaning the cabinet use a soft cloth slightly dampened with a mild solution of detergent and water. NEVER use scouring pads, scouring powders, harsh chemicals or petroleum products.
- Weak batteries can leak and cause corrosion. If the recorder will not be used for a long period of time or if it is used extensively on AC adapter remove the batteries.
- Extended use of this unit in areas of extreme heat or humidity should be avoided.

MAINTENANCE

Only the most competent and qualified technicians should be allowed to service your system. The Marantz company and its factory trained technicians have the knowledge and special equipment needed for repair and calibration of this precision instrument.

In the event of difficulty refer to your dealer or write direcly to one of the locations listed at the end of this manual for the name and address of the Marantz service station nearest your home. Please include the model and serial number of your unit together with a description of what you feel is abnormal in its behaviour.

REPACKING FOR SHIPMENT

Should it become necessary to repack your unit for shipment to the factory, to an authorized service station, or elsewhere, please observe the following precautions:

a. Pack the unit carefully, using the original material as shown in Figure 5.
b. Ship via a reputable carrier (do not use Parcel Post) and obtain a shipping receipt from the carrier.
c. Insure the unit for its full value.
d. Be sure to include your return address on the shipping label.

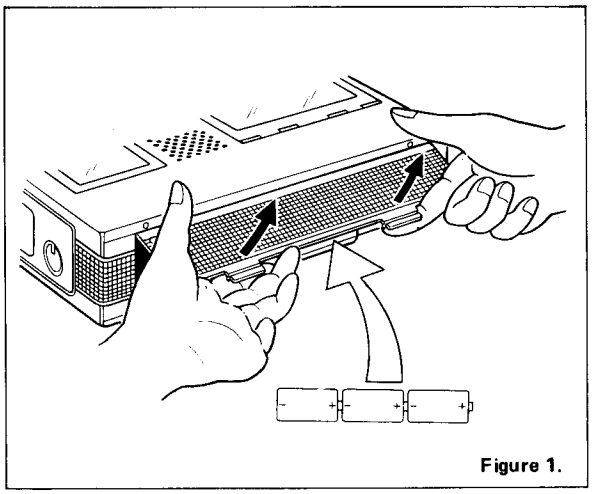


Figure 1.

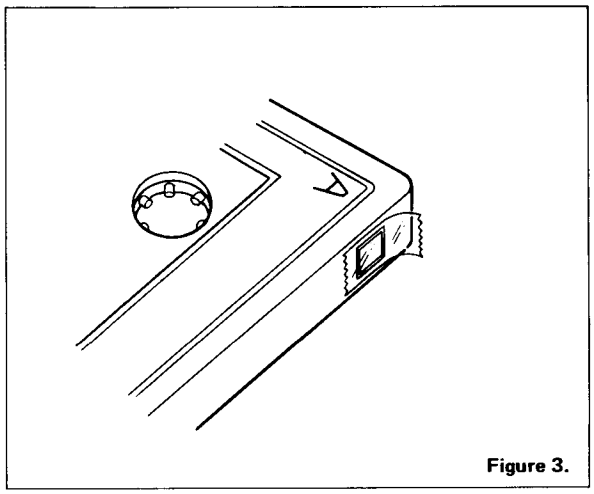


Figure 3.

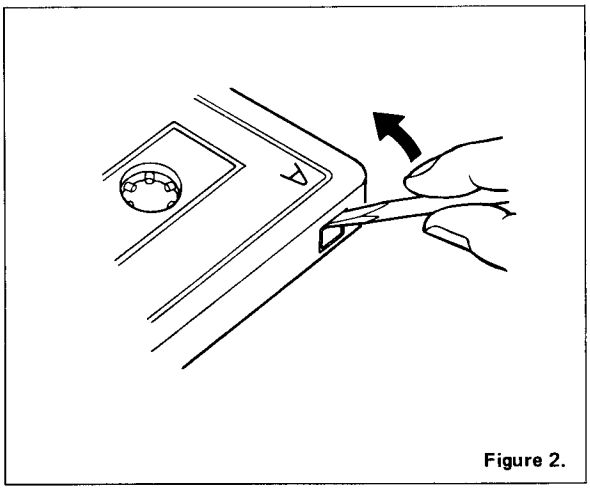


Figure 2.

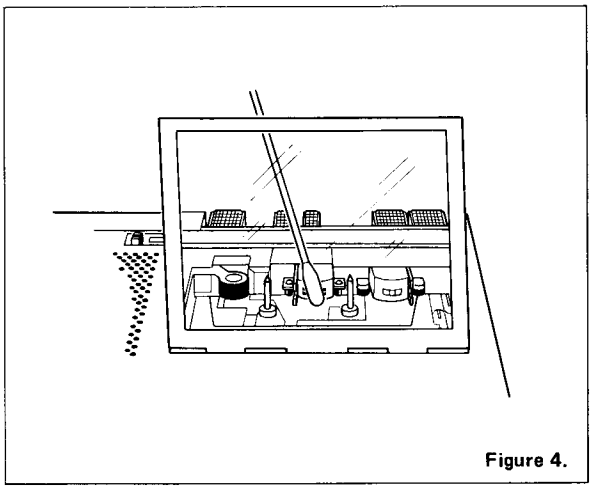


Figure 4.

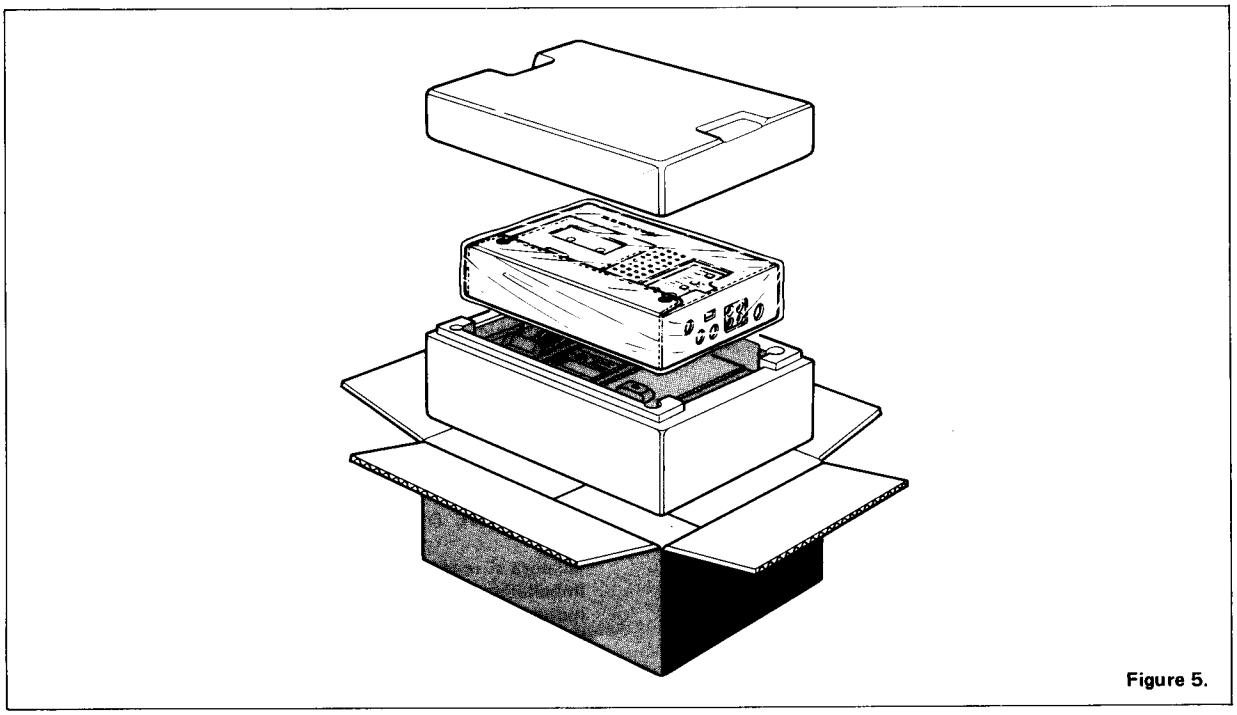


Figure 5.

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